

Mimulus Memo



SEPTEMBER 2018

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EVENTS

SEPTEMBER

- 7 - 9 - State CNPS Gathering & Conservation Symposium, Lee Vining, CA
- 20 - Chapter Meeting, 6pm Program, 7pm

OCTOBER

- 18 - Chapter Meeting, 6pm Program, 7pm
- 20 - Fall Native Plant Sale at CSUB,

NOVEMBER

- 15 - Chapter Meeting, 6pm Program, 7pm

DECEMBER

No Meeting

JANUARY

- 17 - ANNUAL POTLUCK

Kern CNPS Campouts, 2017 & 2018: *Sun, Rain, and a Rainbow of Wildflowers*

by Nancy Nies

PEACEFUL CAMPSITES SET AMONG THE PINES, SCENIC WALKS featuring stream, granite, forest and meadow, and, in summer, a wide variety of wildflowers in colorful bloom — all are to be found at **Horse Meadow** (el. 7600), a secluded spot in the mountains to the northeast of Bakersfield. Though it's less than an hour from Kernville, it seems remote and undiscovered. Over the years, Kern CNPS campout participants have had the campground practically to themselves. At last year's campout in mid-September 2017, six of us experienced a bit of autumn at Horse Meadow. Ten months later, at 2018's mid-July campout there, nine chapter members enjoyed a taste of summer in this serene and beautiful place.

Predictably, the major differences between the two campouts had to do with the weather and the wildflowers. The September campers had clear days and chilly nights, while the July campers saw much warmer temperatures overall and both sunny and overcast skies, with early arrivals witnessing a thunderstorm. There were naturally many fewer flowers blooming in September, yet enough to whet our appetites for the wildflower "feast for the eyes" that the July campout would provide.

Different blooms welcomed us each time, as we approached our destination. On the drive up in September 2017, we had been treated to a bright-yellow display of *Ericameria nauseosa* (rubber rabbitbrush) along Sherman Pass Road and the lower part of Cherry Hill



Above: Close-up of *Eriogonum umbellatum* var. *nevadense*, above Horse Meadow campground - 12 July 2018, **Below:** *Eriogonum umbellatum* var. *nevadense* (Sierra sulfur flower) on hillside above Salmon Creek - 13 July 2018



Above: *Penstemon rostriflorus* (Bridge's penstemon), Cherry Hill Road - 12 July 2018. **Below:** *Penstemon rostriflorus*, Cherry Hill Road - 12 July 2018



Photos by Nancy Nies unless otherwise noted



Castilleja applegatei (wavy-leaf paintbrush), above Horse Meadow campground - 12 July 2018



Lilium kelleyanum (Sierra lily), Horse Meadow campground - 12 July 2018



Rosa woodsii ssp. *ultramontana* (Woods' rose), trail above Horse Meadow campground - 12 July 2018



Potentilla gracilis var. *fastigiata* (slender cinquefoil), Horse Meadow - 13 July 2018

Road. Brilliantly back-lit by the morning sun, the shrubs made for an unforgettable ascent into the mountains. In July 2018 the rabbitbrush was not yet in bloom, but the roadside on the upper portion of Cherry Hill Road was this time punctuated by the vibrant red of *Penstemon rostriflorus* (Bridge's penstemon) at peak bloom.

Plants flowering on both of our Horse Meadow visits, to mention just a few of the particularly eye-catching ones, were: the endemic *Castilleja praeterita* (Salmon Creek paintbrush), creating patches of soft yellow among the sagebrush at the meadow's edge; *Achillea millefolium* (common yarrow), its flat-topped white heads a common sighting in both campground and meadow; *Sidalcea* sp. (checkerbloom) with its pretty pink blooms, gracing moist areas; *Helenium bigelovii* (Bigelow's sneezeweed) growing along streambanks, its long stems topped with showy yellow flower heads; *Trifolium variegatum* (variegated clover), purple with white tips, found in marshy areas of the meadow; and *Solidago* sp. (goldenrod), its deep yellow a streamside stand-out.

In July we saw all of the above plants in bloom, but missed seeing others. A notable example was the great number of plants of the genus *Lupinus* (lupine) we found in the riparian and forested areas surrounding the meadow. Though the foliage of *Lupinus breweri* (Brewer's lupine) carpeted the ground in many places, we saw blooms only in one low spot in the meadow. It may be that there was not sufficient moisture elsewhere for the

plant to bloom, or that we were too early, and that the blooms we saw were only the first of many to come. The opposite was true for a huge number of large lupines like *Lupinus latifolius* (big-leaf lupine). While they still bore their flowers, most had already turned brown. In this case, we had arrived just a little too late to see what must have been a stunning, bluish-purple bloom-time.

However, July did yield many spectacular blooms that we had not seen the previous September: *Penstemon speciosus* (showy penstemon), its trumpet-shaped blue flowers in evidence all over the campground and environs; *Castilleja applegatei* (wavy-leaf paintbrush), its bright red a frequent sight in the campground, as well as on granitic hillsides and canyon walls; *Eriogonum umbellatum* var. *nevadense* (Sierra sulfur flower), often found growing alongside the paintbrush, its vivid yellow a striking contrast to the rich red of its *Castilleja* neighbors.

The summer campout brought additional impressive, colorful sightings: *Lilium kelleyanum* (Sierra lily), a beautiful orange lily blooming in moist areas; *Rosa woodsii* ssp. *ultramontana* (Woods' rose), a joy to discover along the trail above the campground; *Angelica capitellata* (*Sphenosciadium capitellatum*) (ranger's button), found in wooded and riparian areas, its white "buttons" visible from afar; *Potentilla gracilis* var. *fastigiata* (slender cinquefoil), its lovely little yellow flowers adorning the wetter areas at the meadow's edge; and *Aquilegia formosa* (crimson columbine), growing in both moist and dry areas, its blooms like tiny hanging lanterns.

On our July visit, these flowers — and more — also caught our eye: *Perideridia parishii* ssp. *latifolia* (Parish's yampah), found in moist areas, its flowerheads resembling delicate white lace; *Geranium californicum*



Perideridia parishii ssp. *latifolia* (Parish's yampah), trail above Horse Meadow campground - 12 July 2018



Penstemon newberryi (mountain pride), Horse Meadow campground - 12 July 2018



Platanthera dialatata var. *leucostachys* (Sierra bog orchid),
Horse Meadow - 13 July 2018

(California cranesbill), its petals a purple-veined light pink, growing along the meadow's edge; *Mimulus guttatus* (sheep monkey flower), with its large yellow flowers, one of three *Mimulus* species blooming in a streambed next to our campsite; *Penstemon newberryi* (mountain pride), its fuchsia-colored

blossoms gracing a forested slope; and, in a marshy area of the meadow, *Platanthera dialatata* var. *leucostachys* (Sierra bog orchid), its tiny white flowers seemingly woven together into a columnar shape.

It was such a delight to see this rainbow of wildflowers. This account would not be complete, however, without a mention of the wonderful trees we camped and walked among at Horse Meadow — *Pinus jeffreyi* (Jeffrey pine)—with their vanilla-scented bark, their crowns stretching toward the sky and their cones strewn about the campground floor. We'll remember those trees, and one more: high on a dry, rocky slope above the campground, growing among the granite slabs, an ancient and memorably massive specimen of *Juniperus grandis* (Sierra juniper).

A summer or fall visit to Horse Meadow — either on a Kern CNPS campout or on your own — can be recommended to all who seek to experience the peace and beauty of nature. If you're like many of us who have been there, once you visit Horse Meadow, you'll want to return! 🌸



Right: Top: Paul Gipe and Lucy Clark admiring *Juniperus grandis* (Sierra juniper), above Horse Meadow campground - 12 July 2018, **Middle:** Kern CNPS members botanizing in Horse Meadow, surrounded by *Achillea millefolium* (common yarrow) - 13 July 2018, **Bottom:** Chapter members relaxing, Horse Meadow campground - 12 July 2018

President's Message: Fire, the New Norm, or the Old Norm, for Kern County?

by Rich Spjut

KERN COUNTY LIES CENTRALLY AT THE CROSS roads of many southern California geologic and floristic regions; yet, the flora and vegetation are not especially diverse in view of the relatively few endemic species of perennial plants. Could fire in the past have occurred so frequently and/or so intensely that species could not re-establish themselves or evolve?

Regions, divided into a number of geographical varieties. A 40-acre cypress forest that burned on Breckenridge Mountain in 1970 has not regenerated, whereas on Piute Mountain cypress seedlings developed after burns in 1921, 1976, and 2008. Another conifer, incense cedar (*Calocedrus decurrens*), is common in the Greenhorn Mountains and further south — but absent from the Piute Mountains region, where possibly extirpated by fire.

In the Tehachapi Mountains, cypress is known from fossils dated 17 million years ago. Other Tehachapi plant fossils of that time (Miocene) were of species that apparently became extinct there and elsewhere. One

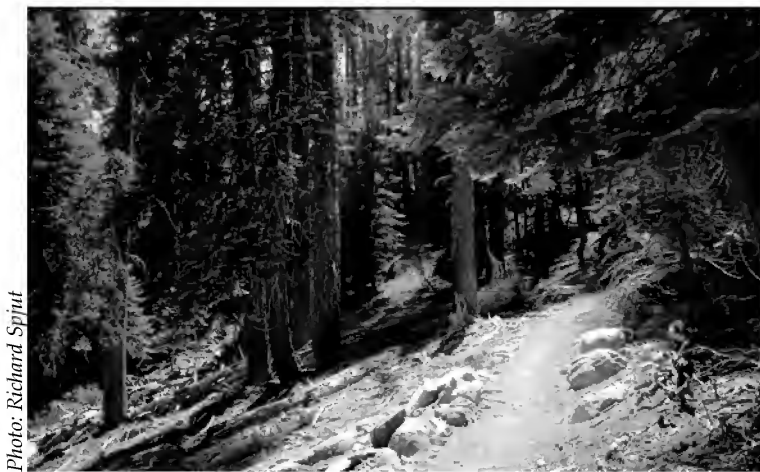


Photo: Richard Spjut

Red fir (*Abies magnifica* var. *crutchfieldii*) forest along trail to Sunday Peak — 03 Aug 2016

Last year the Cedar Fire destroyed the red fir (*Abies magnifica*) forest at its southernmost range in Sierra Nevada on Sunday Peak; consequently, the species may no longer exist in Kern County, assuming it does not regenerate in view of our warming climate.

Piute cypress (*Hesperocyparis nevadensis*) — a species that depends on fire to open its seed cones — is found mostly in Kern County, and also interpreted as a widespread species of the Intermountain and California

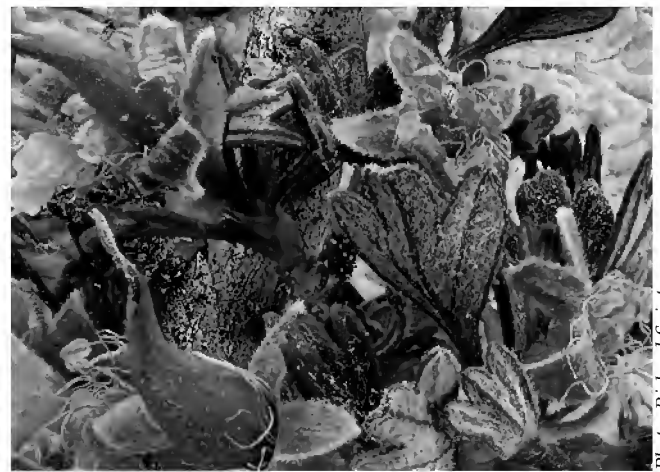


Photo: Richard Spjut

Purshia tridentata (bitterbrush) Sorrel Peak, Piute Mountains

interesting exception is the genus *Lyonothamnus* (iron wood), a distinctive Rosaceae shrub or tree, known not only from the Tehachapi fossils, but also from Miocene fossils in western Nevada and elsewhere in California; it now survives only in the Channel Islands. As redwood (*Sequoia sempervirens*) was once formerly distributed in Eurasia and western North America, today it survives along northern coastal California and southern Oregon. The maritime climate, especially fog, helps moderate more extreme seasonal and diurnal tempera-



Photo: Richard Spjut



Photo: Richard Spjut

Left: *Cercocarpus ledifolius* (curl-leaf mountain mahogany), Ruby Mountains, NV **Right:** Twig-leaf-fruit of same.

Photo: Richard Spjut



Above: *Arctostaphylos patula* shrubland alliance, Kern Plateau, CNPS Chapter field trip to Horse Meadow



Right: *Arctostaphylos patula* twig leaf-fruit, Sunday Peak

tures, and this is evident for other California and Baja California shrub species, which include monotypic or oligotypic genera endemic to the Northern Vizcaíno Desert of Baja California.

Since the time of Tehachapi fossil flora — when Bakersfield was situated along the Pacific coast — Kern County became more geographically isolated with less oceanic influence as mountains rose to the west (Coast Ranges) and south (Transverse Ranges). To the east summer monsoonal rains may have declined as the Sierra Nevada uplifted. The rain-shadowed region became increasingly arid and warmer, especially during summer. Tropical forest and woodland species were replaced with gray pine, interior live oak and blue oak woodlands, saltbush-lands, Mojave Desert scrub types, and annual herb-lands (valley and foothill seasonal wildflower displays).

The lack of Kern endemic shrub species in *Arctostaphylos* (manzanita), *Ceanothus* (lilac, buck brush), *Lupinus*, and other speciose genera, which otherwise have numerous endemic species in floristic divisions of California outside Kern County (as defined by the **Jepson Manual**), may be the result of a long history of drought and fire that may be expected to continue in the future in other areas of California. Most California endemic species occur in the Coast Ranges that are associated with the California Floristic Province. In contrast, Kern County has widely distributed Madrean chaparral species such as *Arctostaphylos patula* and *A. pungens*, that occur east and north to Montana or Utah, and south to Mexico.

Examples of other transmontane species — those in the Great Basin and Madrean regions -- that reach their western distribution limits in Kern County are mountain mahogany (*Cercocarpus ledifolius*), silver buffalo berry (*Shepherdia argentea*), antelope bush (*Purshia*

glandulosa), and may include associations such as *Pinus jeffreyi* or *P. ponderosa* and *Purshia tridentata*. Their limited occurrences today in Kern County may be due to more recent fire episodes, those perhaps that occurred in the past 2 million years. Other transmontane species such as grease bush (*Forsellesia nevadensis*) and basin yellow catseye (*Cryptantha confertiflora*) are rare in Kern County. They have been found together on limestone slopes where vegetation is relatively sparse, and where they are less likely to be consumed by fire; undoubtedly, they were once more widespread in Kern County. I refer to all of these, except *P. glandulosa*, as Kern County relicts; many are found in Piute Mountains.

Even common California chaparral species are relatively rare in Kern County. Traveling beyond Kern County to Tulare, Ventura or San Luis Obispo County, one will soon encounter chamise (*Adenostoma fasciculatum*) in abundance. Relict patches of this species occur with bush poppy in the Caliente region of the Piute Mountains, and in the Tehachapi Mountains. Their association, known as desert chaparral, was no doubt once more extensive in Kern County as was mixed evergreen forest species of California laurel (*Umbellularia californica*) reported from Breckenridge Mountain. They have since been replaced by Douglas oak and grey pine woodlands.

Although one might perceive their occurrences

in Kern County as the result of a recent long-distance dispersal events, this is unlikely in view of the plant geographical data. In summary, Kern County is getting drier and hotter, and the vegetation will continue to burn as it probably has been doing for the past 23 million years.

REFERENCES: Taxonomic and geographic data can be found on web pages prepared by the author by typing the genus name followed by “World Botanical” in an Internet search. Images for most species are presented on the same web pages. This info is being updated for a manual of trees and shrubs of Kern County, the main page for which can be found by doing an Internet search for “kern trees shrubs”

Other reference material for this article can be found in previous *Mimulus Memos*, Mar 2016, Sept 2016, and Jan 2017. 🌱



Adenostoma fasciculatum (chamise) near Valley Center, CA

Photo: Richard Spjut

Thank You to:

- ... **Lucy Clark**, for spearheading, producing and coordinating the cooling and rejuvenating 2018 campout at Horse Meadow.
- ... **Rich Spjut**, Chapter President for his presentation on *Relict Plants in the Paiute Mountains* and his informative Mimulus Memo reports. 🌸

Chapter Meetings

upcoming TOPICS

September 20, 2018

Denis Kearns, BLM Botanist (ret.)
"Vegetation & Flora of New Mexico"

October 18, 2018

Cynthia Powell, Calflora
"New Calflora Tools for CNPS Users"

November 15, 2018

Kathryn Prince, The Xerces Society
"On Native Plants and Pollinators"

All chapter meetings are held the
3rd Thursday of each month at the
 Kern County Supt. of Schools, Rm. 1A
 1300 17th Street, Bakersfield, CA

Meeting times:

6 pm — Discussion groups on plant identification and native plant gardening

7 pm — Program presentation

Conservation Corner:

by Fred Chynoweth

THE FEDERAL GOVERNMENT HAS BEEN actively targeting environmental regulations. CNPS has staff and chapter volunteers diligently trying to keep up with all the new developments.



There are three Federal Register Notices detailing proposed changes to the **Federal Endangered Species Act (FESA)**. Deadline for comments is **September 24**. **Greg Suba** will be reviewing and drafting comments before. If you want to join the party, please contact Greg via phone or email (sooner is better).



There are 8 new bills that have been introduced into the U.S. House, each picking away at a different piece of the FESA. Greg Suba will also be watching those bills with the help of the **California Federal Lands Defense** network, in which CNPS is a participant.



California's wildlands are dominated by ecosystems that evolved with fire. Recognition by scientists and land managers of the ecological benefits of fire has led to the development of policies and guidance to support the expanded use of fire to improve ecological conditions and more effectively undertake fire management. CNPS conservation recommends joining with other non profits and governmental agencies in signing onto a memorandum of understanding regarding the use of fire for ecosystem benefits while also promoting public safety. 🌸



CALIFORNIA
NATIVE PLANT SOCIETY

CNPS is the leader for providing reliable information on California native plants and plant conservation. Comprehensive information about California's flora and vegetation communities is available throughout the state for conservation and educational purposes. CNPS's leadership influences personal ethics and actions, as well as public policy for native plant protection.



Bakersfield Cactus Project: Update

by Lucy Clark

ON JULY 28, HARDY, HEAT-RESISTANT CNPS-ers, **Fred Chynoweth, Dale Gradek, Paul Gipe, Gurleen Khan, Don Turkal, Lucy Clark, Clyde Golden,** and **Nature Conservancy's Zack Principe** met at 8 am at the Caliente Post Office to use a watering truck and cans to sprinkle the cactus we transplanted in January on TNC's ranch. All cacti were alive and had additional pads! The work was completed in the record time of two hours. Thanks to Paul for organizing this event.



Another watering day is planned for the **end of August**, as the heat has been intense. Don Turkal will lead this group. ❀

Where Have All the Flowers Gone?

By Ellen Cypher

MANY VISITORS TO THE CARRIZO PLAIN IN 2018 were expecting to see the showy displays of wildflowers that earned the area the "Superbloom" designation in 2017... but they came away disappointed. So where did all the wildflowers go? In a word: underground. Most wildflowers in the Carrizo Plain and other arid lands around the world are annuals, a strategy in which the plants complete their life cycle in a single growing season and wait out the dry season as seeds. In the meantime, the seeds are stored in the soil not too far below the ground surface, in what is called the **soil seed bank**. Those seeds sprout and grow into recognizable plants when temperature and moisture conditions are just right and any additional barriers to germination are overcome. Some perennial plants do grow on the Carrizo Plain and similar landscapes. This type of plant survives through one or more dry seasons as fleshy roots, bulbs, or similar structures — which also are underground. Among the perennials you can find on the Carrizo are **blue dicks, larkspurs,** and various **wild onions**. Even these plants may not show up every year, waiting until years of "normal" rainfall to push stems above ground and produce leaves and flowers.

Each type of annual plant needs a different combination of moisture and temperature to stimulate seed growth. Native wildflowers (those that evolved in this region over thousands or millions of years) generally do best in years when abundant rain occurs during the cool months of mid-winter. Many native plants produce a cluster or "rosette" of leaves at ground

level during the winter and do not send up a flower stalk until the weather begins to warm up in the spring. The ubiquitous nonnative grasses — most of which evolved in the Mediterranean region of Europe — generally respond to warm fall rains. Some of the more familiar nonnative grasses are **red brome, soft chess, foxtail barley,** and **wild oats**. When this area receives early rainfall, the nonnative grasses get a head start on the native wildflowers and turn the hillsides green. By putting down roots early in the growing season, these annual grasses are able to capture and absorb any rain that falls, leaving too little available for the native wildflower seeds to grow or survive beyond the seedling stage. Thus, years when rains begin early while temperatures are still warm and rains come regularly throughout the fall and winter have been called "**grass years**." A different set of conditions is needed to produce the masses of native flowers known as "**Superblooms**." These tend to occur in years with abundant winter rainfall that does not begin until the cooler months of late fall and follows several years of drought.

Germination barriers can take several forms. Some plants produce chemicals in the seed coat (the outermost layer of the seed) that must be leached out by repeated wetting before the seeds can sprout.

Others have such hard or thick-walled seed coats that mechanical action such as rubbing or grinding by soil particles is needed

before water can penetrate. And still others — particularly those that grow in vernal pools — need to be immersed underwater for some time to allow fungi and other decay organisms to break down the seed coat. Many years — even 50 or more! — may pass before seeds of a given type of wildflower are ready to start growing again. For this reason, the endangered **California jewelflower** was thought to have disappeared from the Carrizo Plain entirely, until an observant biologist spotted it in the late 1980s.

In the driest years, annual plants may bloom when they are only an inch or two high, producing only one or a few flowers, and they may or may not live until the few seeds are mature. But because they do produce at least some seeds in most years, usually at least a few of those seeds are ready to grow each year. In the "off" years these small, scattered plants are hard to find, unlike the showy patches that can be seen from miles away in the wetter years. Luckily for visitors to the Carrizo Plain, Superblooms come along once every decade or so. We can only guess what type of year this will be ... ❀

At least one third of California's native plants are found nowhere else in the world.

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Field Chapter of the

CALIFORNIA
 NATIVE PLANT SOCIETY

California Native Plant Society meets
 the third Thursday of each month at:
 Kern County Supt. of Schools
 City Centre, Room 1A or 1B
 1300 17th Street, Bakersfield, CA 93301
 Chapter website: kern.cnps.org

California Native Plant Society is a non-profit organization dedicated to the conservation of California native plants and their natural habitats, increasing the understanding, appreciation, and horticultural use of native plants. CNPS has 31 chapters throughout the state and membership is open to all persons – professional and amateur – with an interest in native plants. Members have diverse interests including natural history, botany, ecology, conservation, photography, drawing, hiking and field work. As a Kern County resident, your membership includes a subscription to the quarterly journal with articles on all aspects of native plants; a statewide report of activities and schedules; and a newsletter, the newsletter of the Kern Chapter.

Join your membership online at www.cnps.org.

1 Income – \$25

2 V – \$75